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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,467	03/31/2004	Jeff Lovin	514730/95007	8018

7590 12/05/2005
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EXAMINER

ABOAGYE, MICHAEL

ART UNIT PAPER NUMBER

1725

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/814,467	LOVIN ET AL.	
	Examiner	Art Unit	
	Michael Aboagye	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/31/04 & 12/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAIL ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucas (US Patent No. 3882593) in view of Steinhart et al. (US Patent No. 4606489)

Lucas teaches a method of inertia welding a first work piece to a second weld piece comprising: loading the first work piece (12) into a rotating chuck (14) attached to a spindle (21) including a motor and loading the second work piece (13) into a non-rotating chuck (16) movable towards the spindle by a slide; applying torque to the spindle to accelerate the spindle to achieve a preselected first rotational speed; further including applying torque to the spindle to maintain the predetermined first rotational speed of the spindle for a time period after the spindle has been accelerated to the predetermined first rotational speed and before coasting of the spindle; coasting the spindle to achieve a preselected second rotational speed; removing torque after achieving the predetermined first rotational speed and before friction welding together the first and second work pieces; inertia friction welding together the first and second work pieces; transferring energy from the rotating spindle during the inertia friction welding of the two work pieces; the spindle having a mass, the energy being stored by the rotating mass before being transferred by the spindle wherein the spindle includes a flywheel which provides additional mass; and removing the welded together work pieces from the spindle and the non-rotating chuck(Lucas, figure; Abstract, column 1, line 1 – column 3, line 45).

Lucas does not specifically teach a trial run involving inertia friction welding sample work pieces with a specified angular orientation with respect to each other; measuring and storing data related to the deceleration of the spindle during the sample inertia friction welding; wherein measuring and storing the data during formation of the sample weld comprises measuring a rotational speed of the spindle and a rotary position of the spindle during deceleration of the spindle; calculating a sample deceleration profile of the spindle from the data acquired during the formation of the sample weld; wherein calculating the sample deceleration profile includes measuring a rotational speed of the spindle and a rotary position of the spindle as a function of time.

However Steinhart et al. teaches an apparatus with a rotatable holder for a first work piece to be joined to a second work piece by friction welding, comprising an adjustable speed control means (4) for providing the drive motor with a variable torque, a position sensing means (8), a clock means (24), a memory means (12) to store deceleration profile determined during a period of trial run, a comparison means for the memory means connected to the memory means and to the position sensing means during production run for generating error signal in response to deviation, a logic means(13) connected to the comparison means for modifying the operation of the speed control means in response to error signal so as to arrest the production work pieces in the stop in a predetermine angular position based on the determination from the trial run (Steinhart et al., abstract; column 2 line 36 – column 3, line 49).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of inertia friction welding Lucas by

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providing adjustable speed control means, for providing the drive motor with a variable torque, a position sensing means, a clock means, a memory means to store deceleration profile determined during a period of trial run, a comparison means for the memory means connected to the memory means and to the position sensing means during production run for generating error signal in response to deviation, a logic means connected to the comparison means for modifying the operation of the speed control means in view of the teachings of Steinhart et al. so as to arrest the production work pieces in the stop in the predetermine angular position based on the determination from the trial run (Steinhart et al., abstract, figures 1-8; column1, lines 33- line 47; column 2 line 36 – column 3, line 49).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miller et al. (US 3750927), Jones et al. (US 4067490), Deal et al. (US 5248078) and Ablett et al. (US 6138896) are also cited in PTO-892.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Michael Aboagye
Assistant Examiner
Art Unit 1725

12/01/2005

KEVIN KERNS
PRIMARY EXAMINER

Kevin Kerns 12/1/05